



## Important Information You'll Want to Know

What is TRI?

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Who Uses TRI?

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# What is TRI?

## Background

In 1984, a lethal gas leaked from a Union Carbide pesticide plant in Bhopal, India, causing the deaths of nearly 6,500 people. Nine months later, a similar plant in West Virginia had a potentially dangerous release of a toxic pesticide. No lives were lost, but it was clear that toxic chemical releases, both routine and accidental, could endanger public health. In response to this threat, Congress passed the Emergency Planning and Community Right-to-Know Act (EPCRA).

Hailed as one of the strongest environmental laws passed in the 1980's, the Right-to-Know Act's primary purpose is to inform communities and citizens of chemical hazards. The law was written with ordinary people in mind, and was based on the principle that the more people know, the more effective they can be in improving local health and safety. The law requires businesses to report the locations and quantities of chemicals stored on site, and helps communities prepare for chemical spills and similar emergencies. It also requires certain facilities to report releases to the environment of over 650 toxic chemicals and chemical categories. This information is collected into a national and publicly available database... the Toxics Release Inventory (TRI).

**Each year over 95,000 reports representing billions of pounds of chemical releases are submitted to EPA by more than 25,000 facilities.**

TRI is unique in that it marks the first time that the public has direct access to detailed information about releases and management of toxic chemicals in their communities. With information from TRI, citizens can increase their knowledge of chemical releases in their area and use this knowledge to affect community environmental policy and change.

## TRI Information

The TRI database includes information on:

- ✓ What chemicals were released into the local environment since 1988;
- ✓ How much of each chemical went into the air, water and land;
- ✓ How much of the chemicals were transported away from the reporting facility for disposal, treatment, recycling or energy recovery; and
- ✓ How chemical wastes were treated, disposed, recycled, or burnt for recovery at the reporting facility.

TRI is a public "report card" for the industrial community, creating a powerful motivation for waste reduction. This annual accounting of the nation's management of industrial toxic chemical wastes is a valuable source of information for concerned individuals and communities. Citizens can use TRI to evaluate local facilities through comparisons, determine how toxic chemicals are used, and with other information, identify and evaluate potential health risks to their community. Organizations can use TRI information as a starting point for constructive dialogue with facilities in their area.



# Who Reports to TRI?

## Reporting Requirements

A facility is required to report if it:

1. Has ten or more full-time employees (or the equivalent of 20,000 work hours per year);
2. Manufactures, imports, or processes over 25,000 pounds or uses more than 10,000 pounds of one of the approximately 650 designated chemicals or the 28 chemical categories specified in TRI; and/or
3. Manufactures, imports, processes or uses any Persistent, Bioaccumulative and Toxic (PBT) chemical above the specified chemical threshold during the reporting year. PBT chemical thresholds range from 0.1 gram to 100 pounds; and
4. Conducts operations as specified by the Standard Industrial Classification (SIC) Codes... as listed to the right.

Standard Industrial Classification (SIC) Codes by Industry	
10	Metal Mining (excluding 1011, 1081, 1094)
12	Coal Mining (excluding 1241)
20	Food
21	Tobacco
22	Textiles
23	Apparel
24	Lumber and Wood
25	Furniture
26	Paper
27	Printing and Publishing
28	Chemicals
29	Petroleum and Coal
30	Rubber and Plastics
31	Leather
32	Stone, Clay and Glass
33	Primary Metals
34	Fabricated Metals
35	Machinery (excluding electrical)
36	Electrical and Electronic Equipment
37	Transportation Equipment
38	Instruments
39	Miscellaneous Manufacturing
49	Electric Utilities (including 4911, 4931, 4939)
4953	Commercial Hazardous Waste Treatment
5169	Chemicals and Allied Products - Wholesale
5171	Petroleum Bulk Terminals and Plants
7389	Solvent Recovery Services

TRI provides the first comprehensive overview of toxic chemical pollution from manufacturing facilities in the United States; however, reporting requirements do not cover all industries that release toxic chemicals. Also, the law does not cover toxic chemicals that reach the environment from non-industrial sources such as automobiles. Reported

releases are estimates and there is no way to discern whether a chemical has been released in a single large burst or routinely throughout the year. Though the TRI database does offer information on the health effects of a specific chemical, the user cannot ascertain levels of exposure or risk without combining TRI information with information from other sources. Although the TRI reporting base has its limitations, it provides communities with a springboard from which citizens can seek further vital information about toxic chemicals in their area.



## Who uses TRI?

The TRI is a rich source of data originally intended for concerned citizens who, on their own or through organized groups, use TRI to raise and answer questions about chemical releases in their communities. Today, TRI has a broad-based audience that includes manufacturers, environmental consulting firms, trade associations, labor groups, health professionals, state and local environmental agencies, Local Emergency Planning Committees (LEPCs), and federal agencies. Whether the TRI is used to influence local government action, emergency planning, the education of citizens, or to spur industry-citizen cooperation, it is clear that it plays a vital role in enhancing nationwide efforts to improve our nation's precious environment.

**CITIZENS.** The Emergency Planning and Community Right-to-Know Act (EPCRA) was written on the principle that the more citizens know, the more effective they can be in avoiding chemical hazards in their communities. TRI enables citizens to become more aware of toxic chemicals in their own neighborhoods. It encourages dialogue between individuals and local companies which can result in a change in current practices and improve local environment. For example, a group of Minnesota residents used TRI data to encourage a local facility to reduce the use of a carcinogen by 90 percent. One neighborhood near Houston, Texas, worked directly with a local plant to develop an emissions reduction plan, using recent TRI data as the basis for discussions. Citizens often use the TRI data in combination with other information sources to determine health-related risks in their community.

**BUSINESSES.** Businesses can use the TRI data as a basis for reducing large stocks of toxic chemicals located in dense population areas or to lower levels of chemical releases. TRI data is also used to cut costs and improve operations. "Wastes" represent an expense - an estimated \$100 billion + is spent in producing the toxic wastes in TRI alone. Companies are using TRI to increase awareness of environmental business opportunities and, as a result, reduce the use of toxic chemicals. TRI is also used to market chemicals or processes that are cleaner, safer, or more cost-effective for the reporting facilities. Law firms, real estate companies, insurance firms, and banks use TRI to identify potential liability issues associated with a particular parcel of land or facility. Most important of all, the publicity that has resulted from the availability of TRI data has caused many companies to voluntarily reduce toxic chemical releases.

**FEDERAL AGENCIES.** TRI data is used extensively at the federal level for a variety of programs. Congress relies on TRI to prepare environmental legislation. The Agency for Toxic Substances and Disease Registry, a federal public health agency whose job it is to prevent or minimize adverse health effects from exposure to hazardous substances, uses TRI data to set goals for improving the nation's health. The Internal Revenue Service uses TRI data to measure the compliance of reporting companies with tax laws pertaining to the use of toxic substances.



**EDUCATIONAL INSTITUTIONS.** Academic researchers rely heavily on TRI data to conduct critical studies of the environment. Several universities use TRI reports to study how chemicals are used and develop alternative technologies for the prevention of toxic releases.

**PUBLIC INTEREST GROUPS.** Public interest groups make effective use of the TRI data by challenging facilities to educate citizens. Most often, they use TRI to bring public sentiment to bear on facilities and public officials. For example, the Silicon Valley Toxics Coalition used TRI to identify companies emitting potentially harmful chemicals, and urged them to cut releases. One official from a well-known company was quoted as saying that the “right to know” was a “significant factor” in the decision to significantly reduce their chemical releases. National public interest groups often publish reports based on the TRI data. For example, a study highlighting the nation’s toxic polluters and a report naming companies releasing known ozone-depleting chemicals were developed as a result of the availability of the TRI data. The TRI is also vital for presenting a convincing case to influence legislators. The Massachusetts Public Interest Research Group figured prominently in the passage of the nation’s first state toxics-use reduction law, and many other states have followed suit.

**LABOR ORGANIZATIONS.** Concern for worker safety was a key factor in the original passage of the national right-to-know legislation. The right to know about chemical hazards in the workplace has been a consistent goal of organized labor since the early 1970s. The Amalgamated Clothing and Textile Workers Union teamed up with a Minnesota community and used the TRI data to campaign for a reduction in the use of methylene chloride, a known health hazard to the workers, and to search for safer alternatives. Union members and activist pressured the state for tougher regulations that would force the company to cut emissions by 93 percent. One worker remarked, “Right-to-Know” provided the catalyst. Once the community got involved, there was a tremendous pressure on the business to reduce the risks!” Publication of toxic release data often causes companies to improve environmental performance.

**STATE AND LOCAL AGENCIES.** TRI data is vital to hospitals, schools, and state and local governments for emergency planning and response at the state and local level. Many Emergency Management Agencies, fire departments, and Emergency Medical Services use TRI to identify chemicals in use and map facility layouts for more effective, quicker response to emergencies. The TRI data is also used to identify the need for, the introduction and passage of state and local legislation.

**HEALTH OFFICIALS.** TRI data can be used to build an information base on hazardous chemicals used, manufactured, or transported in a state or community. Health professionals can use this information to prepare personnel for emergencies. TRI is used to help diagnose, treat or study health effects resulting from chemical exposure in the community or workplace.



# How Does TRI Affect Me?

## A Matter of Risk

- ✓ **What are these chemicals and how toxic are they?**
- ✓ **What other chemicals are made or stored at this facility?**
- ✓ **Will these chemicals affect my health?**
- ✓ **What is the government doing about these releases?**
- ✓ **How do I find out what's going on in my community?**

These are not easy questions to answer. Many factors must be considered in order to evaluate what risks, if any, you face from the presence of toxic chemicals in your local environment. Risk is the measure of the chance that you will experience health problems or the environment will be degraded. Risk screening uses available information, such as TRI, to develop a relative estimate of risk for a given set of conditions. Risks are ranked as high, medium, or low in order to set priorities for further evaluation.

## Risk Screening

TRI data is a first link to discovering which chemicals being manufactured, released, or transferred in your community pose a threat to human health and the environment. TRI will tell you the names and estimated amounts of chemicals released in your area during the preceding year. You can also find out about chemicals that were transferred into or away from your area for treatment and disposal. This information alone does not indicate the risks that these chemicals pose or may pose to human health and the environment. Small releases of highly toxic chemicals may be a greater risk than very large releases of less toxic chemicals. Though TRI data is useful to evaluate the risk in your community, other information is required to form a complete picture. A determination of risk depends on the release conditions, extent of exposure, environmental conditions, and other factors.

### Ranking the Potency of the Chemical

The toxicological potency of a chemical is a measure of a chemical's potential harm to human health and the environment. Health effects include the potential to cause cancer, genetic damage, reproductive damage, or harm to the nervous system. Environmental effects incorporate potential for damage to plants, animals, and fish.

### Ranking the Exposure of the Chemical

Regardless of how toxic a chemical is, it cannot do harm unless it has contact with the environment or a human being. In ranking exposure, you must first look at the amount of the chemical that is being released, the duration and intensity of the release, and how long the chemical remains in the environment. Then it is important to define the route of the exposure. Is the chemical moving through the air, surface water, or ground water? Finally, the exposed population must be defined, as the more people exposed the higher the likelihood that health problems will occur.

### Ranking the Potential Risk of the Chemical

Using the potency and the exposure ratings, risk screening identifies the chemicals, facilities, and routes of exposure that present a "high", "medium" or "low" priority for a follow-up investigation. This final step establishes the probability that a release in a particular area will harm human health or the environment.



## What You Can Do to Learn More About Risk

Once you become aware of toxic chemical releases in your community, you can decide what to do next. Here are several ideas...

**LEARN THE FACTS.** In addition to chemical release information, TRI contains the names and phone numbers of public contacts at reporting facilities. Companies are becoming more sensitive to citizens' concerns about health and the environment, and some have begun community outreach programs. Company officials may provide answers to your questions that could affect risk screening. They can also steer you toward local agencies, for example, the Local Emergency Planning Committee (LEPC).

**GO TO YOUR LOCAL LIBRARY.** Ask your librarian to help you find information about chemicals in your community. There are several standard reference works that can help you decide whether further investigation is warranted.

**IDENTIFY YOUR LOCAL SAFETY AND HEALTH AGENCIES.** These groups can help you evaluate what you have learned and identify any additional information you may need. Most counties have a public health agency staffed by one or more doctors, including a county health officer. Some areas have poison control centers with toxicologists and other staff who may be of some assistance. If you have difficulty identifying appropriate agencies in your area, call the local hospital or fire department for a referral.

**LOCATE YOUR LOCAL EMERGENCY PLANNING COMMITTEE.** The Emergency Planning and Community Right to Know Act (EPCRA) which created TRI also established Local Emergency Planning Committees (LEPCs) to plan for emergency action in the event of hazardous chemical spills and similar incidents. LEPCs are aware of hazardous chemicals used and stored by facilities in your area. They receive Material Safety Data Sheets that detail physical properties and health effects of hazardous chemicals used by local manufacturers and other facilities. LEPCs, while often associated with existing county-level emergency planning and civil defense agencies, include representatives of environmental and transportation agencies, fire fighters, hospitals, the media, community groups, and others.

**CALL THE AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR).** ATSDR is the leading federal public health agency concerned with risks resulting from chemical exposure. ATSDR makes information on the health effects of hazardous substances available to the public, conducts health assessments, and sponsors research.

**NETWORK WITH NEIGHBORS AND COMMUNITY GROUPS.** This is a good way to exchange information, participate in meetings with officials, experts, and company representatives, and plan activities that address your concerns. The more people that are involved, the more attention you are likely to receive from industry officials, government agencies, and the news media.



# Factors to Consider When Using TRI

TRI data, in conjunction with other information, can be used as a starting point in evaluating exposures that may result from releases and other waste management activities which involve toxic chemicals. The determination of potential risk depends upon many factors, including the toxicity of the chemical, the fate of the chemical, and the amount and duration of human or other exposure to the chemical after it is released. Listed below are some of the factors that should be considered when reviewing TRI data.

## Toxicity of the Chemical

- **The TRI list consists of chemicals that vary in their ability to produce toxic effects.** Some high-volume releases of less toxic chemicals may appear to be a more serious problem than lower-volume releases of more toxic chemicals, when just the opposite may be true.

## Exposure Considerations

- **Potential degradation or persistence of the chemical in the environment.** Exposure to a chemical is dependent upon the chemical being available in the environment.
- **Bioconcentration of the chemical in the food chain.** As a chemical becomes incorporated in the food chain, it may concentrate or disperse as it moves up the food chain.
- **The environmental medium (air, water, land, or underground injection) to which the toxic chemical is released.** Chemical exposure of a population depends on the environmental medium to which a chemical is released.
- **The type of off-site facility receiving the chemical and the efficiency of its waste management practices.** The amount of a toxic chemical that ultimately enters the environment depends on how the chemical was handled during treatment, energy recovery or recycling activities.
- **On-site waste management of the toxic chemical.** As with off-site waste management, the amount of the toxic chemical released to the environment depends on how the chemical was handled during treatment, energy recovery or recycling activities.



## Limitations of TRI Data

While TRI provides federal, state and local governments, the public, and industry with key environmental data, it has some limitations that must be considered:

- TRI data reflect releases and other waste management of chemicals, not exposures of the public to those chemicals.
- Although the EPA has expanded the TRI program, it does not cover all sources of releases and other waste management activities such as automobile emissions, nor does it cover all toxic chemicals or industry sectors.

Beyond reporting releases and waste management activities, only limited and very general information on chemical storage is provided. In addition, while many facilities base their TRI data on monitoring data, other facilities report estimated data to TRI as the program does not mandate chemical release monitoring.